

## Claims:

1. Method for purifying coke oven waste water charged with nitrogen compounds, cyanides, and sulfides,

whereby the coke oven waste water flows through a reactor (3) that is part of a liquid circulation system (2), which reactor contains at least one gas-permeable membrane tube (5) that is impacted on the inside by a pressurized gas (4) that contains oxygen, and

whereby a biofilm (6) is maintained on the outside of the membrane tube (5) around which liquid flows, where selective nitrification of nitrogen-containing compounds contained in the waste water to nitrates takes place in the inner region (7) that is rich in oxygen, because of the gas permeability of the membrane tube (5) and, at the same time, denitrification of nitrates to elemental nitrogen takes place in an outer region (8) of the biofilm (6) that is poor in oxygen.

2. Method according to claim 1, whereby several reactors (3) are switched in series within the liquid circulation system (2), through which the liquid stream flows, one behind the other.

3. Method according to claim 1 or 2, whereby the thickness of the biofilm (6) is regulated by way of the flow velocity of the liquid in the reactor (3).

4. Method according to claim 1 to 3, characterized in that the pressurized gas stream (4) that is passed to the membrane tube (5) is regulated using analysis values of the waste water that are measured in the liquid circulation system (2).

5. Method according to claim 1 to 4, characterized in that before removal of a purified partial stream (11) from the liquid circulation system (2), this partial stream (11) is freed of biofilm particles, preferably using a clarification device (12) that is integrated into the liquid circulation system (2).

6. Method according to claim 1 to 5, characterized in that feed of non-purified coke oven waste water into the liquid circulation system (2) is regulated or controlled using analysis values of the purified waste water.

7. Method according to claim 1 to 6, characterized in that the non-purified coke oven waste water is passed through a chemical precipitation stage before being introduced into the liquid circulation system (2).

8. Method according to claim 1 to 7, characterized in that the temperature of the waste water in the reactor (3) is adjusted by way of a heat exchanger (13).